

```
=> s hydrzine/cn
L1          0 HYDRZINE/CN

=> s hydrazine/cn
L2          1 HYDRAZINE/CN

=> s "cuprous oxide"/cn
L3          1 "CUPROUS OXIDE"/CN

=> s "diethylene glycol"/cn
L4          1 "DIETHYLENE GLYCOL"/CN

=> file ca
```

FILE COVERS 1907 - 10 Dec 2009 VOL 151 ISS 25
FILE LAST UPDATED: 10 Dec 2009 (20091210/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2009

CA now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s 3
L5      7420060 3
75% OF LIMIT FOR TOTAL ANSWERS REACHED

=> s 14
L6      16488 L4

=> s 13
L7      13975 L3

=> s 12
L8      26064 L2

=> s 16 and 17
L9      38 L6 AND L7

=> s 18 and 19
L10     6 L8 AND L9

=> d all 6
```

L10 ANSWER 6 OF 6 CA COPYRIGHT 2009 ACS on STN

AN 135:124156 CA

ED Entered STN: 16 Aug 2001

TI Bactericide combinations in detergents

IN Elsmore, Richard; Houghton, Mark Phillip

PA Robert McBride Ltd., UK

SO Brit. UK Pat. Appl., 53 pp.

CODEN: BAXXDU

DT Patent

LA English

IC ICM C11D003-48

CC 46-6 (Surface Active Agents and Detergents)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI GB 2354771	A	20010404	GB 1999-23253	19991001
PRAI GB 1999-23253		19991001		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
GB 2354771	ICM	C11D003-48
	IPCI	C11D003-48 [ICM, 7]
	IPCR	C11D003-38 [I,C*]; C11D0003-386 [I,A]; C11D0003-48 [I,C*]; C11D0003-48 [I,A]
	ECLA	C11D003/00B13; C11D003/386

AB The detergent comprises a bactericide in combination with an anionic, cationic, nonionic or amphoteric surfactant which has a C12-18 alkyl group as the longest chain attached to the hydrophilic moiety. Creduret 50 (hydrogenated ethoxylated castor oil) 50, citric acid 12, formalin 10, sodium alkyl benzene sulfonate (C12-20) alkyl 1, perfume white line 0.5, detergent enzyme savingase 0.2, and bactericide Pr 4-hydroxybenzoate 1.0 parts formed a detergent, showing reduction activity after contact 2.

ST bactericide surfactant detergent

IT Balsams
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(Canada; bactericide combinations in detergents)

IT Amine oxides
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(C10-16-alkyldimethyl; bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(C12-14-alkyltrimethyl, chlorides; bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(C12-18-alkyl; bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(C14-18-alkyl; bactericide combinations in detergents)

IT Alcohols, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(C16-18, ethoxylated; bactericide combinations in detergents)

IT Fatty acids, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(C16-18, phentachlorophenyl esters; bactericide combinations in

detergents)

IT Amines, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (C16-18-unsatd. alkyl; bactericide combinations in detergents)

IT Amines, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (C8-10-alkyl; bactericide combinations in detergents)

IT Fatty acids, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (C8-10; bactericide combinations in detergents)

IT Amines, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (C8-18-alkyl; bactericide combinations in detergents)

IT Amines, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (N-C10-18-alkyltrimethylenediamines, reaction products with
 chloroacetic acid; bactericide combinations in detergents)

IT Amines, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (N-coco alkyltrimethylenediamines; bactericide combinations in
 detergents)

IT Amines, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (N-tallow alkyltrimethylenediamines, ethoxylated; bactericide
 combinations in detergents)

IT Amines, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (N-tallow alkyltrimethylenediamines; bactericide combinations in
 detergents)

IT Balsams
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (Peru; bactericide combinations in detergents)

IT Resins
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (Siam gum benzoin; bactericide combinations in detergents)

IT Anthracene oil
 (acid extract for bactericide combinations in detergents)

IT Pimenta
 (acris; extract for bactericide combinations in detergents)

IT Carboxylic acids, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (aliphatic, salts; bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (alkylbenzyldimethyl, chlorides; bactericide combinations in
 detergents)

IT Surfactants
 (amphoteric; bactericide combinations in detergents)

IT Surfactants
 (anionic; bactericide combinations in detergents)

IT Antibacterial agents
Creosote
(bactericide combinations in detergents)

IT Asphalt
Coconut oil
Creosote oil
Epoxy resins, uses
Hydrocarbon oils
Paraffin oils
Pyrethrins
Tar acids
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(benzyl-C12-14-alkyldimethyl, chlorides; bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(benzyl-C12-16-alkyldimethyl, chlorides; bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(benzyl-C12-18-alkyldimethyl, chlorides; bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(benzyl-C12-18-alkyldimethyl, salts with 1,2-benzisothiazol-3(2H)-one 1,1-dioxide (1:1); bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(benzyl-C16-18-alkyldimethyl, chlorides; bactericide combinations in detergents)

IT Almond (*Prunus amygdalus*)
(bitter; extract for bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(cade; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(cassia; bactericide combinations in detergents)

IT Secretions (external)
(castoreum; bactericide combinations in detergents)

IT Surfactants
(cationic; bactericide combinations in detergents)

IT Essential oils
RL: MOA (Modifier or additive use); USES (Uses)
(cedar; for bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(clove; bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);

BIOL (Biological study); USES (Uses)
(coco alkyl, acetates; bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(coco alkyl; bactericide combinations in detergents)

IT Amines, uses
Betaines
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(coco alkyltrimethyl; bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(coco alkyltrimethyl, chlorides; bactericide combinations in detergents)

IT Fatty acids, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(coco, reaction products with aminoethylaminoethanol, quaternized; bactericide combinations in detergents)

IT Amine oxides
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(cocoalkyldimethyl; bactericide combinations in detergents)

IT Balsams
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(copaiba; bactericide combinations in detergents)

IT Naphthenic acids, uses
Resin acids
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(copper salts; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(cypress; bactericide combinations in detergents)

IT Polysulfides
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(di-tert-nonyl; bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(dialkyldimethyl, chlorides; bactericide combinations in detergents)

IT Quaternary ammonium compounds, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(dicoco alkyltrimethyl, chlorides; bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(dimethyltallow alkyl; bactericide combinations in detergents)

IT Coal tar
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(distillate; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)

(eucalyptus; bactericide combinations in detergents)

IT *Abelmoschus moschatus*
 Allspice (*Pimenta dioica*)
 Amyris balsamifera
 Angelica archangelica
 Aniba rosaeodora
 Anise
 Artemisia
 Artemisia maritima
 Camphor tree (*Cinnamomum camphora*)
 Capsicum frutescens
 Caraway (*Carum carvi*)
 Chrysanthemum cinerariaefolium
 Cinnamomum zeylanicum
 Cistus ladanifer
 Citrus medica
 Coriander
 Cumin
 Cymbopogon citratus
 Cymbopogon nardus
 Cymbopogon winterianus
 Dill
 Dipteryx odorata
 Evernia furfuracea
 Evernia prunastri
 Fennel (*Foeniculum vulgare*)
 Fennel (*Foeniculum vulgare vulgare*)
 Fir (*Abies balsamea*)
 Gaultheria procumbens
 Ginger
 Grapefruit
 Guaiacum officinale
 Hay
 Hedeoma pulegioides
 Helichrysum stoechas
 Iris pseudacorus
 Jasmine (*Jasminum grandiflorum*)
 Juniper (*Juniperus communis*)
 Juniper (*Juniperus mexicana*)
 Juniper (*Juniperus virginiana*)
 Laurus nobilis
 Lavender (*Lavandula hybrida*)
 Lavender (*Lavandula spica*)
 Lime (*Citrus aurantifolia*)
 Mandarin orange
 Melaleuca alternifolia
 Mentha arvensis piperascens
 Musks
 Myristica fragrans
 Narcissus juncifolius
 Parsley (*Petroselinum crispum*)
 Patchouli
 Peppermint (*Mentha piperita*)
 Pimenta racemosa
 Pine (*Pinus*)
 Pine (*Pinus pumila*)
 Pine (*Pinus sylvestris*)
 Propolis
 Rose (*Rosa damascena*)
 Rosemary
 Sage (*Salvia sclarea*)
 Sandalwood (*Santalum album*)

Spanish marjoram
Spartium junceum
Spearmint (*Mentha spicata*)
St.-John's-wort (*Hypericum perforatum*)
Star anise (*Illicium verum*)
Thyme (*Thymus capitatus*)
Vaccinium myrtillus
Valerian (*Valeriana*)
Vetiveria zizanioides
Viola odorata
Wheat
Ylang-ylang (*Cananga odorata*)
(extract for bactericide combinations in detergents)

IT Bergamot (*Citrus bergamia*)
Birch (*Betula lenta*)
Birch (*Betula pendula*)
Ocimum basilicum
Savory (*Satureja hortensis*)
(extract; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(geranium; bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(hydrogenated tallow alkyl, acetates; bactericide combinations in detergents)

IT Resin acids
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(hydrogenated, Me esters; bactericide combinations in detergents)

IT Collagens, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(hydrolyzates, [3-(dodecyldimethylammonio)-2-hydroxypropyl], chlorides;
bactericide combinations in detergents)

IT Naphthenic acids, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(iron salts; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(lavender; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(lemon, extraction residues; bactericide combinations in detergents)

IT Detergents
(liquid; bactericide combinations in detergents)

IT Fats and Glyceridic oils, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(margosa; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(mint, *Mentha*; bactericide combinations in detergents)

IT Perfumes
(myrrh; extract for bactericide combinations in detergents)

IT Surfactants

(nonionic; bactericide combinations in detergents)

IT Resins
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(olibanum; bactericide combinations in detergents)

IT Resins
(opopanax; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(peppermint; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(pine; bactericide combinations in detergents)

IT Fatty acids, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(potassium salts; bactericide combinations in detergents)

IT Protein hydrolyzates
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(reaction products with undecenoyl chloride, salts; bactericide combinations in detergents)

IT Pelargonium graveolens
(saponified extract for bactericide combinations in detergents)

IT Orange
(sour; extract for bactericide combinations in detergents)

IT Balsams
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(storax; bactericide combinations in detergents)

IT Orange
(sweet, Valencia; extract for bactericide combinations in detergents)

IT Almond (Prunus amygdalus)
Orange
(sweet; extract for bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(tallow alkyl, ethoxylated, reaction products with chloroacetic acid; extract for bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(tallow alkyl; bactericide combinations in detergents)

IT Fatty acids, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(tallow, reaction products with triethanolamine, quaternized; bactericide combinations in detergents)

IT Essential oils
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(thyme, Thymus vulgaris; bactericide combinations in detergents)

IT Balsams
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(tolu; bactericide combinations in detergents)

IT Balsams
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)

(tonka bean; bactericide combinations in detergents)

IT Amines, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(unsatd., C18; bactericide combinations in detergents)

IT Naphthenic acids, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(zinc salts; bactericide combinations in detergents)

IT 58999-88-5D, 1-Propanaminium, 3-amino-N,N,N-trimethyl-, derivs.
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(N-C12-18 acyl derivs., Me sulfates; bactericide combinations in detergents)

IT 50-00-0, Formaldehyde, uses 50-00-0D, Formaldehyde, reaction products, uses 50-14-6 50-21-5, uses 50-65-7 50-99-7, D-Glucose, uses 51-03-6 51-28-5, uses 52-51-7 52-68-6 54-21-7 54-64-8 55-38-9 55-56-1 55-86-7 56-35-9 56-36-0 56-37-1 56-38-2 56-95-1 57-09-0 57-10-3, Hexadecanoic acid, uses 57-15-8 57-24-9, Strychnidin-10-one 57-55-6D, Propylene glycol, reaction products with formaldehyde 58-36-6 58-89-9 59-50-7 59-87-0 60-12-8, Benzeneethanol 60-51-5 61-73-4 62-38-4 62-56-6, Thiourea, uses 62-73-7 63-25-2 64-18-6, Formic acid, uses 64-18-6D, Formic acid, reaction products 64-19-7D, Acetic acid, derivs., uses 64-69-7 65-85-0, Benzoic acid, uses 67-20-9 67-63-0D, 2-Propanol, reaction products with boron trifluoride and 5-ethylidenebicyclo[2.2.1]hept-2-ene, uses 67-66-3, uses 67-68-5, uses 67-97-0 69-72-7, uses 70-55-3 71-23-8, 1-Propanol, uses 71-41-0, 1-Pentanol, uses 72-43-5 72-56-0 74-83-9, uses 75-12-7D, Formamide, reaction products with formaldehyde, uses 75-21-8, Oxirane, uses 75-31-0, 2-Propanamine, uses 75-91-2 76-06-2 76-22-2 76-39-1 76-87-9 77-42-9 77-48-5 77-49-6 77-78-1D, Dimethyl sulfate, quaternized with 9-octadecenoic acid/triethanolamine reaction products 77-78-1D, Dimethyl sulfate, quaternized with fatty acid/triethanolamine reaction products 77-92-9, uses 78-59-1 78-69-3 78-70-6 78-79-5D, Isoprene, reaction products with acetic acid 78-83-1, uses 78-92-2, 2-Butanol 79-07-2 79-08-3 79-11-8, uses 79-11-8D, Chloroacetic acid, reaction products with N-C10-16-alkyltrimethylenediamines 79-11-8D, Acetic acid, chloro-, reaction products with diethylenetriamine N-mono- and di-C8-18-alkyl derivs., uses 79-14-1, uses 79-20-9 79-21-0, Ethaneperoxoic acid 79-69-6 79-92-5D, 2,2-Dimethyl-3-methylenebicyclo[2.2.1]heptane, reaction products with 2-methoxyphenol, hydrogenated 80-26-2 80-27-3 80-46-6 80-71-7 81-07-2D, 1,2-Benzisothiazol-3(2H)-one 1,1-dioxide, salts with quaternary ammonium compds., benzyl-C12-18-alkyldimethyl (1:1) 81-14-1 81-15-2 81-81-2 81-82-3 82-66-6 83-34-1 83-79-4 84-65-1, 9,10-Anthracenedione 84-66-2 84-74-2 85-91-6 87-10-5 87-17-2 87-20-7 87-22-9 87-90-1 88-04-0 88-06-2 88-14-2, 2-Furancarboxylic acid 88-84-6 89-68-9 89-78-1 89-79-2 89-83-8 90-05-1D, Phenol, 2-methoxy-, reaction products with 2,2-dimethyl-3-methylenebicyclo[2.2.1]heptane, hydrogenated 90-13-1 90-17-5 90-43-7, [1,1'-Biphenyl]-2-ol 90-43-7D, [1,1'-Biphenyl]-2-ol, chlorinated 90-87-9 91-20-3, Naphthalene, uses 91-61-2 91-64-5, 2H-1-Benzopyran-2-one 93-15-2 93-16-3 93-51-6 93-59-4, Benzenecarboxylic acid 93-65-2 93-69-6 93-89-0 94-13-3 94-18-8 94-26-8 94-36-0, uses 94-96-2 95-14-7, 1H-Benzotriazole 95-41-0 95-48-7, uses 96-24-2 96-29-7 97-23-4 97-24-5 97-54-1 97-77-8 98-01-1, 2-Furancarboxaldehyde, uses 98-11-3D, Benzenesulfonic acid, mono-C10-14-alkyl derivs., compds. with Me 1H-benzimidazol-2-ylcarbamate, uses 98-53-3 98-55-5 99-49-0 99-76-3 99-86-5 100-37-8 100-44-7, uses 100-51-6, Benzenemethanol, uses 100-52-7, Benzaldehyde, uses 100-73-2 100-86-7 100-89-0 100-97-0, uses 101-20-2 101-21-3 101-39-3 101-53-1 101-84-8

101-85-9 102-17-0 102-20-5 102-30-7 102-71-6D, copper complexes
102-71-6D, Triethanolamine, reaction products with 9-octadecenoic acid,
di-Me sulfate-quaternized 102-98-7 103-05-9 103-26-4 103-52-6
103-82-2, Benzenoacetic acid, uses 103-95-7 104-09-6 104-21-2
104-29-0 104-53-0, Benzenopropanal 104-54-1 104-55-2 104-60-9
104-61-0 104-62-1 104-67-6 104-76-7 104-78-9 104-87-0 105-01-1
105-66-8 105-85-1 105-87-3 105-90-8 106-22-9 106-24-1 106-25-2
106-30-9 106-44-5, uses 106-46-7 106-70-7 106-72-9 106-73-0
106-79-6 106-88-7 106-89-8, uses 107-02-8, 2-Propenal, uses
107-21-1D, Ethylene glycol, reaction products with formaldehyde
107-22-2, Ethanodial 107-41-5 107-43-7 107-75-5 107-95-9D,
 β -Alanine, N-coco alkyl derivs. 108-16-7 108-39-4, uses
108-64-5 108-80-5, 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione 108-88-3,
uses 108-89-4 108-94-1, Cyclohexanone, uses 108-95-2, Phenol, uses
108-95-2D, Phenol, polypropene derivs., uses 108-99-6 109-21-7
109-89-7, uses 110-05-4 110-15-6, Butanedioic acid, uses 110-27-0
110-38-3 110-41-8 110-44-1 110-58-7, 1-Pantanamine 110-62-3,
Pantanal 110-75-8 110-86-1, Pyridine, uses 110-89-4, Piperidine,
uses 111-11-5 111-27-3, 1-Hexanol, uses
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(bactericide combinations in detergents)

IT 111-30-8, Pentanedial 111-40-0D, 1,2-Ethanediamine, N-(2-aminoethyl)-,
reaction products with 1-chlorooctane 111-40-0D, Diethylenetriamine,
reaction products with chloroacetic acid, N-mono- and di-C8-18-alkyl
derivs. 111-41-1D, 2-(2-Aminoethyl)aminoethanol, reaction with coco
fatty acids, quaternized 111-42-2, uses 111-46-6D, Diethylene
glycol, reaction products with formaldehyde 111-61-5 111-81-9
111-82-0 111-85-3D, 1-Chlorooctane, reaction products with acetic acid
and diethylenetriamine 111-85-3D, 1-Chlorooctane, reaction products with
N-(2-aminoethyl)-1,2-ethanediamine 111-92-2 112-00-5 112-02-7
112-18-5 112-34-5D, 2-(2-Butoxyethoxy)ethanol, reaction products with
formaldehyde 112-38-9, 10-Undecenoic acid 112-39-0 112-43-6,
10-Undecen-1-ol 112-45-8, 10-Undecenal 112-53-8, 1-Dodecanol
112-54-9, Dodecanal 112-59-4 112-61-8 112-69-6 112-72-1,
1-Tetradecanol 112-75-4 112-80-1D, 9-Octadecenoic acid (9Z)-, reaction
products with triethanolamine, di-Me sulfate-quaternized, uses 112-90-3
113-48-4 114-26-1 114-63-6 115-29-7 115-31-1 115-32-2 115-71-9
116-25-6 117-18-0 117-52-2 118-52-5 118-55-8 118-58-1 118-71-8
118-79-6 119-36-8 119-61-9, uses 120-32-1 120-47-8 120-50-3
120-51-4 120-57-0, 1,3-Benzodioxole-5-carboxaldehyde 120-72-9,
1H-Indole, uses 121-32-4 121-33-5 121-44-8, uses 121-54-0
121-65-3 121-75-5 122-07-6 122-14-5 122-18-9 122-19-0 122-34-9
122-40-7 122-42-9 122-48-5 122-67-8 122-69-0 122-70-3
122-78-1, Benzeneacetaldehyde 122-97-4, Benzenopropanol 122-99-6
123-05-7 123-11-5, uses 123-29-5 123-30-8 123-32-0 123-66-0
124-04-9, Hexanedioic acid, uses 124-07-2, Octanoic acid, uses
124-09-4, 1,6-Hexanediamine, uses 124-13-0, Octanal 124-19-6, Nonanal
124-22-1, 1-Dodecanamine 124-43-6 124-65-2 124-76-5 126-06-7
126-11-4 126-15-8 126-91-0 127-41-3 127-43-5 127-51-5 127-65-1
127-90-2 127-91-3 128-03-0 128-04-1 128-08-5 128-09-6 129-06-6
131-11-3 131-52-2 132-27-4 133-06-2 133-07-3 133-53-9 134-20-3
134-28-1 134-62-3 135-79-5 136-45-8 136-53-8 136-77-6 136-85-6
137-16-6 137-26-8 137-30-4 137-40-6 137-41-7 137-42-8 138-93-2
139-07-1 139-08-2 140-10-3, uses 140-11-4 140-39-6 140-72-7
140-95-4 141-94-6 142-18-7 142-59-6 142-62-1, Hexanoic acid, uses
142-71-2 143-07-7, Dodecanoic acid, uses 143-08-8, 1-Nonanol
143-14-6, 9-Undecenal 143-50-0 144-55-8, Carbonic acid monosodium
salt, uses 144-62-7, Ethanedioic acid, uses 147-71-7 148-24-3,
8-Quinolinol, uses 148-79-8 149-30-4, 2(3H)-Benzothiazolethione
149-57-5 150-78-7 150-84-5 151-01-9 151-21-3, uses 156-62-7
298-12-4 299-84-3 300-76-5 302-01-2, Hydrazine, uses

330-54-1 333-41-5 334-48-5, Decanoic acid 359-37-5 379-52-2
 404-86-4 470-43-9 470-82-6 473-34-7 475-20-7D, reaction products
 with formic acid and boron trifluoride 488-10-8 489-86-1 498-81-7
 499-83-2, 2,6-Pyridinedicarboxylic acid 502-61-4 504-24-5,
 4-Pyridinamine 507-60-8 507-70-0 514-51-2 515-00-4 515-69-5
 520-45-6 527-07-1 532-32-1 533-74-4 534-18-9 535-89-7 536-59-4
 536-60-7 538-71-6 539-82-2 539-90-2 541-91-3 544-63-8,
 Tetradecanoic acid, uses 551-92-8 556-61-6 557-08-4 576-55-6
 577-11-7 582-25-2 584-79-2 589-38-8, 3-Hexanone 589-66-2
 591-12-8 597-09-1 615-62-3 620-23-5 621-82-9, uses 624-15-7
 625-51-4 626-82-4 628-63-7 638-37-9, Butanodial 639-58-7
 643-79-8, 1,2-Benzenedicarboxaldehyde 646-06-0, 1,3-Dioxolane 659-40-5
 683-10-3 688-73-3D, Stannane, tributyl-, mono(naphthenoyloxy) derivs.
 692-86-4 695-10-3D, 1H-Imidazole-1-ethanol, 4,5-dihydro-, 2-nortall-oil
 alkyl derivs. 696-59-3 699-02-5 705-86-2 706-14-9 719-96-0
 731-27-1 762-26-5 770-35-4 789-02-6 821-55-6, 2-Nonanone
 825-51-4 828-00-2 870-72-4 886-50-0 900-95-8 925-78-0,
 3-Nonanone 929-73-7 959-55-7 971-66-4 991-42-4
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
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 IT 996-35-0 1000-82-4 1066-30-4 1067-97-6 1085-12-7 1085-98-9
 1111-67-7 1119-94-4 1119-97-7 1120-24-7 1120-48-5 1121-30-8
 1121-31-9 1123-85-9 1135-66-6 1192-52-5 1205-17-0 1209-61-6
 1222-05-5 1300-71-6 1303-28-2, Arsenic oxide (As2O5) 1303-86-2,
 Boron oxide (B2O3), uses 1303-96-4D, Borax (B4Na2O7.10H2O), reaction
 products with sulfuric acid 1305-78-8, Calcium oxide, uses 1309-48-4,
 Magnesium oxide (MgO), uses 1310-58-3, Potassium hydroxide (K(OH)), uses
 1310-73-2, Sodium hydroxide (Na(OH)), uses 1314-13-2, Zinc oxide (ZnO),
 uses 1314-84-7, Zinc phosphide (Zn3P2) 1317-38-0, Copper oxide (CuO),
 uses 1317-39-1, Copper oxide (Cu2O), uses 1319-77-3
 1320-44-1 1322-14-1 1323-00-8 1327-53-3, Arsenic oxide (As2O3)
 1330-43-4, Boron sodium oxide (B4Na2O7) 1331-83-5 1332-07-6
 1332-65-6, Copper chloride hydroxide (Cu2Cl(OH)3) 1333-53-5 1333-58-0
 1333-82-0, Chromium oxide (CrO3) 1333-83-1, Sodium fluoride (Na(HF2))
 1334-78-7 1335-10-0 1335-12-2 1335-46-2 1341-49-7, Ammonium
 fluoride ((NH4)(HF2)) 1405-92-1 1414-45-5, Nisin A 1438-94-4
 1446-61-3 1490-04-6 1634-02-2 1643-20-5 1696-17-9 1715-30-6
 1777-82-8 1854-23-5 1854-26-8 1875-89-4 1885-38-7 1892-43-9
 1897-45-6 1983-10-4 2016-56-0 2019-69-4 2032-65-7 2050-08-0
 2090-05-3 2104-96-3 2120-70-9 2155-70-6 2216-51-5 2224-44-4
 2244-16-8 2244-21-5 2275-23-2 2279-96-1, Butanediperoxoic acid
 2305-25-1 2310-17-0 2372-82-9 2374-05-2 2390-68-3 2436-90-0
 2439-10-3 2445-76-3 2463-53-8, 2-Nonenal 2491-38-5 2492-26-4
 2500-83-6 2527-57-3 2527-58-4 2565-36-8 2571-88-2 2631-40-5
 2634-33-5, 1,2-Benzisothiazol-3(2H)-one 2639-63-6 2682-20-4
 2756-56-1 2782-57-2 2832-19-1 2871-78-5 2875-41-4D, Glycine,
 N-(3-aminopropyl)-, N'-C10-16-alkyl derivs., hydrochlorides 2893-78-9
 2921-88-2 3006-10-8 3033-23-6 3064-70-8 3090-35-5 3142-72-1
 3228-02-2 3302-10-1 3313-92-6 3332-27-2 3380-34-5 3383-96-8
 3398-33-2 3547-33-9 3586-55-8 3691-35-8 3696-28-4 3697-42-5
 3710-84-7 3766-81-2 3784-03-0 3785-34-0 3811-68-5 3811-73-2
 3811-75-4 3851-97-6 3926-62-3D, Acetic acid, chloro-, sodium salt,
 reaction products with 4,5-dihydro-1H-imidazole-1-ethanol 2-norcoco alkyl
 derivs. and sodium hydroxide 3926-62-3D, Sodium chloroacetate, reaction
 products with B-C12-18 alkylmethylenediamines 3984-22-3 4075-81-4
 4080-31-3 4151-50-2 4169-04-4 4180-23-8 4182-44-9 4191-73-5
 4247-02-3 4299-07-4 4299-60-9 4317-72-0 4317-79-7 4342-36-3
 4454-05-1D, reaction products with ethanol 4525-33-1 4574-04-3
 4602-84-0 4707-47-5 4719-04-4 4724-48-5 4824-78-6 4940-11-8
 5026-62-0 5039-78-1 5153-25-3 5197-80-8 5329-14-6, Sulfamic acid
 5332-73-0 5392-40-5 5395-50-6 5437-45-6 5454-19-3 5462-06-6

5471-51-2 5538-94-3 5538-95-4 5598-13-0 5625-90-1 5725-96-2
 5836-29-3 5915-41-3 5972-76-9 6001-64-5 6011-99-0 6051-03-2
 6152-33-6 6317-18-6 6324-78-3 6378-65-0 6413-26-9 6440-58-0
 6485-40-1 6542-37-6 6582-31-6 6834-92-0 6843-97-6 6915-15-7
 6939-35-1 6988-21-2 7080-50-4 7166-19-0 7173-51-5 7173-62-8
 7281-04-1 7287-19-6 7320-34-5 7378-99-6 7440-22-4, Silver, uses
 7440-50-8, Copper, uses 7446-20-0, Zinc sulfate heptahydrate 7491-20-5
 7491-21-6 7492-67-3 7540-51-4 7549-37-3 7553-56-2, Iodine, uses
 7601-54-9D, Trisodium phosphate, chlorinated 7631-89-2 7631-90-5
 7632-04-4 7637-07-2D, Boron trifluoride, reaction products with
 2-propanol and 5-ethylidenebicyclo[2.2.1]hept-2-ene 7640-33-7
 7646-85-7, Zinc chloride (ZnCl₂), uses 7647-01-0, Hydrochloric acid,
 uses 7647-15-6, Sodium bromide (NaBr), uses 7664-38-2, Phosphoric
 acid, uses 7664-41-7, Ammonia, uses 7664-93-9, Sulfuric acid, uses
 7681-49-4, Sodium fluoride (NaF), uses 7681-52-9 7681-55-2 7681-57-4
 7681-93-8 7696-12-0 7697-37-2, Nitric acid, uses 7699-45-8, Zinc
 bromide (ZnBr₂) 7704-34-9, Sulfur, uses 7722-64-7 7722-84-1,
 Hydrogen peroxide (H₂O₂), uses 7722-86-3, Peroxymonosulfuric acid
 7726-95-6, Bromine, uses
 RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (bactericide combinations in detergents)

IT

7727-21-1 7733-02-0 7747-35-5 7757-81-5 7757-83-7 7758-02-3,
 Potassium bromide (KBr), uses 7758-19-2 7758-89-6, Copper chloride
 (CuCl) 7758-98-7, Sulfuric acid copper(2+) salt (1:1), uses 7758-99-8
 7775-09-9 7775-27-1 7778-39-4, Arsenic acid (H₃AsO₄) 7778-43-0
 7778-50-9 7778-54-3 7778-66-7 7779-27-3 7779-73-9 7779-78-4
 7779-81-9 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses
 7783-20-2, Sulfuric acid diammonium salt, uses 7783-90-6, Silver
 chloride (AgCl), uses 7786-29-0 7786-30-3, Magnesium chloride (MgCl₂),
 uses 7789-09-5 7789-12-0 7789-29-9, Potassium fluoride (K(HF₂))
 7789-33-5, Iodine bromide (IBr) 7790-28-5 7790-99-0, Iodine chloride
 (ICl) 7803-51-2, Phosphine 8000-41-7, Terpineol 8007-35-0
 8018-01-7 9001-37-0 9002-91-9 9003-07-0D, Polypropylene, phenol
 derivs. 9003-29-6 9003-63-8 9003-99-0, Peroxidase 9004-82-4
 9004-98-2 10028-15-6, Ozone, uses 10031-43-3 10032-15-2
 10043-35-3, Boric acid (H₃BO₃), uses 10049-04-4, Chlorine oxide (ClO₂)
 10058-23-8 10101-41-4 10124-37-5 10154-75-3 10187-52-7
 10198-23-9 10222-01-2 10235-63-9 10294-64-1 10332-33-9
 10339-55-6 10345-79-6 10377-60-3 10378-23-1 10380-28-6
 10453-86-8 10460-00-1 10482-56-1 10486-00-7 10543-57-4
 10588-01-9 10588-15-5 10595-49-0 10605-21-7 10605-21-7D, Methyl
 1H-benzimidazol-2-ylcarbamate, compds. with benzenesulfonic acid
 mono-C₁₀-14-alkyl derivs. 11031-45-1, Santalol 11050-62-7
 11084-85-8, Sodium hypochlorite phosphate (Na₁₃(ClO)(PO₄)₄) 11096-42-7
 12008-41-2, Boron sodium oxide (B₈Na₂O₁₃) 12062-24-7 12069-69-1
 12122-67-7 12124-97-9, Ammonium bromide ((NH₄)Br) 12179-04-3
 12267-73-1 12280-03-4 12427-38-2 13014-03-4 13019-22-2,
 9-Decen-1-ol 13052-19-2 13108-52-6 13149-79-6 13167-25-4
 13197-76-7 13254-34-7 13351-61-6 13426-91-0 13435-05-7
 13463-41-7 13463-67-7, Titanium oxide (TiO₂), uses 13516-27-3
 13517-11-8, Hypobromous acid 13532-18-8 13590-97-1 13701-59-2
 13707-65-8 13720-12-2 13755-29-8 13824-96-9 13826-83-0
 13840-33-0 13863-41-7, Bromine chloride (BrCl) 13877-91-3 13980-04-6
 14073-97-3 14371-10-9 14548-60-8 14576-08-0 14667-55-1
 14676-61-0D, 1-Propanamine, 3-(tridecyloxy)-, branched 14762-38-0
 14816-18-3 14915-37-8 14936-67-5 15323-35-0 15435-29-7
 15510-55-1 15627-09-5 15630-89-4 15707-23-0 15733-22-9
 15739-09-0 15809-19-5 15986-80-8 16079-88-2 16219-75-3D,
 5-Ethylidenebicyclo[2.2.1]hept-2-ene, reaction products with boron
 trifluoride and 2-propanol 16228-00-5 16409-43-1 16491-36-4
 16752-77-5 16828-95-8 16871-71-9 16893-85-9 16919-19-0

16949-65-8	16961-83-4	17084-08-1	17342-21-1	17804-35-2
18181-70-9	18181-80-1	18205-85-1	18339-16-7	18472-51-0
18479-54-4	18479-57-7	18675-16-6	18675-17-7	18794-84-8
18829-56-6	18854-01-8	18972-56-0	19014-05-2	19093-20-0
19379-90-9	19388-87-5	19578-81-5	19766-89-3	19819-98-8
19870-74-7	20013-73-4	20018-09-1	20543-04-8	20545-92-0
20662-57-1	20679-58-7	20834-59-7	20859-73-8, Aluminum phosphide (AlP)	21129-27-1 21145-77-7 21564-17-0 21757-82-4 21834-92-4
22009-37-6	22205-45-4, Copper sulfide (Cu ₂ S)		22221-10-9	22248-79-9
22781-23-3	22882-89-9	22882-91-3	22936-75-0	22981-54-0
23031-36-9	23495-12-7	23560-59-0	23564-05-8	23726-92-3
23726-94-5	23787-90-8	24019-05-4	24048-13-3	24111-17-9
24124-25-2	24291-45-0	24634-61-5	24720-09-0	24851-98-7
25068-14-8	25155-18-4	25155-29-7	25167-82-2	25225-10-9
25254-50-6	25265-71-8	25304-14-7	25377-70-2	25628-84-6
25655-41-8	25988-97-0	26002-80-2	26062-79-3	26172-55-4
26248-98-6	26354-18-7	26530-03-0	26530-20-1	26545-49-3
26617-87-8	26635-93-8	26781-23-7	27083-27-8	27176-87-0
27236-65-3	27253-29-8	27323-41-7		

RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)

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IT	27697-50-3	28069-74-1	28159-98-0	28219-61-6	28302-36-5
	28387-62-4	28434-00-6	28434-01-7	28558-32-9	28645-51-4,
	Oxacycloheptadec-10-en-2-one		28728-61-2	28772-56-7	28777-01-7
	28805-58-5	29232-93-7	29350-73-0	29463-06-7	29873-30-1
	29873-33-4	29973-13-5	30007-47-7	30388-01-3	30560-19-1
	30772-79-3	31075-24-8	31195-95-6	31218-83-4	31501-11-8
	31512-74-0	31906-04-4	32276-75-8	32289-58-0	32388-55-9
	33089-61-1	33704-61-9	33939-64-9	33972-49-5	34375-28-5
	34395-72-7	34413-35-9	34681-10-2	34911-46-1	35109-57-0
	35206-70-3	35285-68-8	35285-69-9	35367-38-5	35445-70-6
	35554-44-0	35575-96-3	35691-65-7	35950-52-8	36059-35-5
	36362-09-1	36631-23-9	36734-19-7	37139-99-4	37228-06-1
	37306-10-8, Chromium copper boride		38083-17-9	38260-54-7	
	38460-95-6D, 10-Undecenoyl chloride, reaction products with protein hydrolyzates, potassium salts		38465-60-0	38664-03-8	38811-14-2
	39236-46-9	39300-45-3	39354-45-5	39515-40-7	39650-63-0,
	1H-Benzimidazole-2-pentanamine		39660-17-8	39758-90-2	40027-80-3
	40188-41-8	40596-69-8	41096-46-2	41877-16-1	42370-07-0
	42436-34-0	42534-61-2	43143-11-9	44992-01-0	46830-22-2
	46917-07-1	50542-90-0	50650-76-5	51015-28-2	51015-29-3
	51026-28-9	51200-87-4	51566-62-2	51580-86-0	51630-58-1
	52299-20-4	52304-36-6	52315-07-8	52513-11-8	52645-53-1
	52684-21-6	52684-23-8	52918-63-5	53082-58-9	53488-14-5
	53720-80-2	53727-58-5	54262-78-1	54406-48-3	54427-07-5, Copper boride
	54464-57-2	54720-15-9	54779-21-4	55142-08-0	55406-53-6
	55566-30-8	55722-59-3	55965-84-9	56073-07-5	56073-10-0
	56148-34-6	56148-37-9	56148-40-4	56289-76-0	56427-82-8
	56709-13-8	56996-62-4, Glokill 77	57006-76-5	57382-78-2	57413-95-3
	57503-06-7	57520-17-9	57576-09-7	57837-19-1	58206-95-4
	58249-25-5	58769-20-3	59323-76-1	59324-17-3	59355-53-2, Citrex S 5
	60114-62-7D, 1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., inner salts		60168-88-9	60207-31-0	60207-90-1
	60239-68-1	60568-05-0	60736-58-5	60763-40-8	60784-31-8
	60812-23-9	61692-81-7	61692-84-0	61702-91-8	61842-86-2
	62476-84-0D, Guanidine, N,N''-1,3-propanediylbis-, N-coco alkyl derivs., acetates	62755-21-9	63085-03-0	63333-35-7	63500-71-0 63943-38-4
	64359-81-5	64440-88-6	64628-44-0	64665-57-2	64988-06-3
	65059-43-0	65289-97-6	65289-98-7	65290-00-8	65400-98-8
	65630-22-0	65694-09-9	65733-16-6	65733-18-8	66062-78-0
	66063-61-4	66065-55-2D, Benzenemethanaminium,			

N-(3-aminopropyl)-N,N-dimethyl-, chloride, N-coco acyl derivs.
 66091-24-5D, 1-Propanaminium, 3-amino-N-ethyl-N,N-dimethyl-, N-lanolin
 acyl derivs., Et sulfates 66204-44-2 66215-27-8 66789-18-2
 66841-25-6 67100-72-5 67171-34-0 67185-04-0 67228-83-5
 67485-29-4 67508-69-4 67633-95-8 67633-98-1 67633-99-2
 67634-01-9 67634-12-2 67634-14-4 67634-15-5 67634-25-7
 67634-26-8 67747-09-5 67772-01-4 67801-33-6 67801-44-9
 67801-47-2 67845-46-9 67846-68-8 68085-85-8 68134-42-9
 68155-66-8 68155-67-9 68188-98-7 68213-85-4 68224-19-1
 68359-37-5 68480-15-9 68480-16-0 68527-77-5 68527-84-4
 68738-96-5 68797-57-9 68890-66-4 68901-15-5 68929-85-1
 68959-20-6 68991-96-8 68991-97-9 69094-18-4 69153-35-1
 70161-44-3 70680-04-5 70680-05-6 70754-17-5 70775-75-6
 70788-30-6 70799-70-1 70862-65-6 71297-57-9 71297-58-0
 71297-59-1 71646-36-1

RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (bactericide combinations in detergents)

IT 72089-08-8 72490-01-8 72963-72-5 73264-51-4 73337-96-9D,
 β-Alanine, N-(2-aminoethyl)-N-(2-hydroxyethyl)-, N-C8-18-acyl derivs.
 74774-67-7 75033-25-9 75147-23-8 76382-10-0D, β-Alanine,
 N-(3-aminopropyl)-, N-coco alkyl derivs. 76653-57-1 76653-58-2
 76733-35-2 76749-58-1 76902-90-4 77492-36-5 77492-37-6
 77492-44-5 78144-21-5 78491-02-8 78587-05-0 79267-18-8
 79267-19-9 79267-20-2 79267-21-3 79267-22-4 81335-77-5
 81412-43-3, Tridemorph 81741-28-8 81786-73-4 81786-74-5 81786-75-6
 81867-37-0 82007-94-1 82432-76-6 82432-77-7 82432-78-8
 82633-79-2 82657-04-3 82790-32-7 82790-35-0 82790-36-1
 82790-38-3 82801-21-6 82801-25-0 82801-26-1 82801-27-2
 83145-28-2 83285-27-2 83601-71-2 84030-30-8 84233-90-9
 84233-92-1 84473-74-5 84631-78-7 84643-53-8 85264-33-1
 86115-11-9 86479-06-3 86880-59-3D, N-coco acyl derivs. 87118-95-4
 88308-77-4 88558-41-2 88995-31-7 89415-87-2 89960-92-9
 90117-66-1 91326-34-0 91465-08-6 92368-90-6 92585-24-5
 93345-88-1 93345-89-2 93345-90-5 93345-91-6 93345-92-7
 93778-80-4 93839-34-0 93856-82-7 93856-83-8 94005-95-5
 94248-21-2 94313-91-4 94361-06-5 94857-31-5 95737-68-1
 96565-37-6 97331-89-0 97331-92-5 97331-93-6 101463-69-8
 102851-06-9 103055-07-8 103298-77-7 103298-78-8 104063-25-4
 104133-05-3 104653-34-1 105024-66-6 105726-67-8 107534-96-3
 107879-22-1 108080-74-6 108166-32-1 108189-00-0 109780-03-2
 109835-67-8 109835-68-9 109835-69-0 111099-92-4 111099-93-5
 111337-53-2 114955-18-9 114955-19-0 114955-20-3 115044-19-4
 116255-48-2 118712-89-3 119515-20-7 119515-38-7 120068-37-3
 120217-93-8 120217-94-9 120983-64-4 121227-99-4 122538-65-2
 122795-41-9 125116-23-6 125770-49-2 125770-50-5 125770-51-6
 126646-06-8 126646-07-9 128275-31-0 136426-54-5 138261-41-3
 138265-88-0, Boron zinc hydroxide oxide (B12Zn4(OH)14O15) 138416-95-2
 138698-36-9 140194-01-0, 1,1,3-Propanetricarboxaldehyde 140194-02-1
 144768-02-5 146919-78-0 149118-66-1 154194-73-7 154339-84-1,
 Silver sodium zirconium phosphate (Ag0.19Na0.47Zr2(HPO4)0.34(PO4)2.66)
 154339-85-2 173291-51-5 173423-45-5, Silver sodium zirconium phosphate
 (Ag0.44Na0.25Zr2(HPO4)0.3(PO4)2.7) 187615-12-9 188739-94-8
 191546-07-3 191546-08-4 199169-27-2 216770-11-5, Silver sodium
 zirconium phosphate (Ag0.05Na0.3Zr2(HPO4)0.65(PO4)2.35) 251089-42-6
 344931-17-5D, 1-Propanaminium, 3-amino-N-[2-[(2-hydroxyethyl)amino]-2-
 oxoethyl]-N,N-dimethyl-, chloride, N-C16-18 acyl derivs. 351224-25-4
 351224-26-5

RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
 BIOL (Biological study); USES (Uses)
 (bactericide combinations in detergents)

IT 9001-92-7, Protease

RL: NUU (Other use, unclassified); USES (Uses)
(bactericide combinations in detergents)

IT 87-86-5, Pentachlorophenol

RL: BUU (Biological use, unclassified); NUU (Other use, unclassified);
BIOL (Biological study); USES (Uses)
(esters with fatty acids; bactericide combinations in detergents)

OSC.G 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)

UPOS.G Date last citing reference entered STN: 16 Feb 2009

OS.G CAPLUS 2008:416464; 2007:1300765; 2006:1215618; 2005:129410; 2005:1867;
2004:652636; 2003:796687; 2003:719292; 2003:202386

=> d all 5

L10 ANSWER 5 OF 6 CA COPYRIGHT 2009 ACS on STN
AN 140:410667 CA
ED Entered STN: 10 Jun 2004
TI Microporous metal particle and its manufacture by reduction of oxide
particle
IN Maruyama, Mutsuhiro
PA Asahi Kasei Corporation, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B22F001-00
ICS B22F005-10; B22F009-24
CC 56-4 (Nonferrous Metals and Alloys)
Section cross-reference(s): 67, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004143497	A	20040520	JP 2002-308121	20021023
PRAI	JP 2002-308121		20021023		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2004143497	ICM	B22F001-00
		ICS	B22F005-10; B22F009-24
		IPCI	B22F0001-00 [ICM, 7]; B22F0005-10 [ICS, 7]; B22F0009-24 [ICS, 7]; B22F0009-16 [ICS, 7, C*]
		IPCR	B22F0001-00 [I, A]; B22F0001-00 [I, C*]; B22F0005-10 [N, A]; B22F0005-10 [N, C*]; B22F0009-16 [N, C*]; B22F0009-24 [N, A]
		FTERM	4K017/AA03; 4K017/BA02; 4K017/BA03; 4K017/BA05; 4K017/CA07; 4K017/DA01; 4K017/DA09; 4K017/EJ01; 4K017/FB03; 4K017/FB07; 4K018/BA01; 4K018/BA02; 4K018/BA04; 4K018/BB04; 4K018/BC09; 4K018/BD10; 4K018/KA22; 4K018/KA33; 4K018/KA70

AB The claimed porous metal particles consist of a plurality of primary
particle size ≤ 200 nm metal particles partially melt bonded at
contact parts and have pore size $\leq 1 \mu\text{m}$. The porous metal
particles are manufactured by reduction treating metal oxide particles having
particle size ≤ 200 nm in an organic dispersion medium, e.g., polyols.
The resulting particles are especially suitable for catalysts, thermal
conducting materials, elec. conducting materials, etc.

ST microporous metal particle oxide redn polyol; catalyst microporous metal
particle manuf; thermal conductor microporous metal particle manuf; elec
conductor microporous metal particle manuf

IT Catalysts
Electric conductors
Reduction
Thermal conductors

(microporous metal particle manufactured by reduction of oxide particle)

IT Porous materials
(microporous; microporous metal particle manufactured by reduction of oxide
particle)

IT Alcohols, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polyhydric, dispersing media; microporous metal particle manufactured by
reduction of oxide particle)

IT 107-21-1, Ethylene glycol, uses 111-46-6, Diethylene glycol,
uses
RL: NUU (Other use, unclassified); USES (Uses)
(dispersing medium; microporous metal particle manufactured by reduction of
oxide particle)

IT 7440-02-0P, Nickel, preparation 7440-05-3P, Palladium, preparation
7440-06-4P, Platinum, preparation 7440-22-4P, Silver, preparation
7440-50-8P, Copper, preparation 7440-57-5P, Gold, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
 (microporous metal particle manufactured by reduction of oxide particle)

IT 1317-38-0, Copper oxide (CuO), reactions 1317-39-1, Copper oxide
(Cu₂O), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
 (microporous metal particle manufactured by reduction of oxide particle)

IT 302-01-2, Hydrazine, uses
RL: NUU (Other use, unclassified); USES (Uses)
 (reducing agent; microporous metal particle manufactured by reduction of
oxide
 particle)

=> d all 4

L10 ANSWER 4 OF 6 CA COPYRIGHT 2009 ACS on STN
 AN 141:413084 CA
 ED Entered STN: 09 Dec 2004
 TI method to produce copper oxide superfine particle dispersion
 IN Maruyama, Mutsuhiro; Son, En-hai
 PA Asahi Kasei Corporation, Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C09D017-00
 ICS B01J013-00; C01G003-02
 CC 49-3 (Industrial Inorganic Chemicals)
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004323568	A	20041118	JP 2003-116715	20030422
	TW 275569	B	20070311	TW 2003-92133891	20031202
PRAI	JP 2002-324639	A	20021108		
	JP 2002-350998	A	20021203		
	JP 2003-116715	A	20030422		
	JP 2003-272467	A	20030709		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2004323568	ICM	C09D017-00
		ICS	B01J013-00; C01G003-02
		IPCI	C09D0017-00 [ICM, 7]; B01J0013-00 [ICS, 7]; C01G0003-02 [ICS, 7]
		IPCR	B01J0013-00 [I,A]; B01J0013-00 [I,C*]; C01G0003-02 [I,A]; C09D0017-00 [I,C*]
		FTERM	4G065/AA06; 4G065/AB03Y; 4G065/BA07; 4G065/BB03; 4G065/CA01; 4G065/DA09; 4G065/EA03; 4G065/FA01; 4J037/AA08; 4J037/DD05; 4J037/EE28
	TW 275569	IPCI	C01G0003-02 [I,C]; C01G0003-02 [I,A]
		IPCR	C01G0003-02 [I,C]; C01G0003-02 [I,A]

- AB The method has processes of synthesizing Cu₂O having a primary particle size of ≤100 nm and secondary particle consisting of weakly aggregated primary particles in a 1st solvent, separating the secondary particle from the 1st solvent, and dispersing the secondary particle into a 2nd solvent containing C≤10 polyalc. The method produces Cu₂O superfine particle dispersion with reducing impurities.
- ST copper oxide superfine particle dispersion polyalc
- IT Polyoxalkylenes, processes
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (method to produce copper oxide superfine particle dispersion)
- IT 111-46-6, Diethylene glycol, processes 302-01-2,
 Hydrazine, processes 25322-68-3, Polyethylene glycol
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (method to produce copper oxide superfine particle dispersion)
- IT 1317-39-1P, Cuprous oxide, preparation
 RL: IMF (Industrial manufacture); PUR (Purification or recovery); PREP (Preparation)
 (method to produce copper oxide superfine particle dispersion)
- IT 598-54-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (method to produce copper oxide superfine particle dispersion)

=> d all 3

L10 ANSWER 3 OF 6 CA COPYRIGHT 2009 ACS on STN
 AN 148:219713 CA
 ED Entered STN: 28 Feb 2008
 TI Method for preparing metal nanoparticles
 IN Sim, In-Keun; Jung, Jae-Woo
 PA Samsung Electro-Mechanics Co., Ltd., S. Korea
 SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 25pp.
 CODEN: CNXXEV
 DT Patent
 LA Chinese
 CC 56-4 (Nonferrous Metals and Alloys)
 Section cross-reference(s): 57

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 101100002	A	20080109	CN 2007-10088821	20070328
	KR 2008004831	A	20080110	KR 2006-63645	20060706
	KR 836659	B1	20080610		
	JP 2008013846	A	20080124	JP 2007-106686	20070416
	US 20080087137	A1	20080417	US 2007-798614	20070515
PRAI	KR 2006-63645	A	20060706		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	CN 101100002	IPCI	B22F0009-24 [I,A]; B22F0009-16 [I,C*]
		IPCR	B22F0009-16 [I,C]; B22F0009-24 [I,A]
	KR 2008004831	IPCI	B82B0003-00 [I,A]
	JP 2008013846	IPCI	B22F0009-24 [I,A]; B22F0009-16 [I,C*]; C01G0003-02 [I,A]; C01B0013-36 [I,A]; B01J0023-06 [I,A]; B01J0023-14 [I,A]; B01J0035-02 [I,A]; B01J0035-00 [I,C*]
		IPCR	B22F0009-16 [I,C]; B22F0009-24 [I,A]; B01J0023-06 [I,C]; B01J0023-06 [I,A]; B01J0023-14 [I,C]; B01J0023-14 [I,A]; B01J0035-00 [I,C]; B01J0035-02 [I,A]; C01B0013-36 [I,C]; C01B0013-36 [I,A]; C01G0003-02 [I,C]; C01G0003-02 [I,A]
		FTERM	4G042/DA01; 4G042/DB12; 4G042/DB21; 4G042/DB22; 4G042/DB24; 4G042/DD04; 4G042/DD08; 4G042/DD13; 4G042/DE03; 4G042/DE04; 4G042/DE06; 4G042/DE07; 4G042/DE08; 4G169/AA02; 4G169/BB02A; 4G169/BB02B; 4G169/BC16A; 4G169/BC21A; 4G169/BC22A; 4G169/BC22B; 4G169/BC35A; 4G169/BC35B; 4G169/BC66A; 4G169/CB81; 4G169/DA05; 4G169/EA01Y; 4G169/EC27; 4K017/AA03; 4K017/AA04; 4K017/BA01; 4K017/BA02; 4K017/BA03; 4K017/BA06; 4K017/BA10; 4K017/CA08; 4K017/EJ01; 4K017/EJ02; 4K017/FB02
	US 20080087137	IPCI	B22F0009-00 [I,A]
		NCL	075/331.000

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The title method comprises mixing (by weight parts) capping mol. 10-80, metal catalyst 0.01-50, reducing agent 0.001-50 and organic solvent 100 at 70-100°C, adding metal precursor 0.001-50 into the mixed solution, heating to 80-150°C (for preparing metal oxide nanoparticles) or 155-180°C (for preparing metal or metal alloy nanoparticles) under stirring, mixing with 0°C or lower solvent for cooling, adding nonpolar solvent for settling the nanoparticles, centrifuging, purifying with organic solvent, and drying at 30-60°C. The method is used for preparing metal, metal alloy, or metal oxide nanoparticles.
 ST prepnanoparticle metal oxide alloy copper
 IT Nanoparticles
 Particle size
 (method for preparing metal nanoparticles)

IT Polyoxalkylenes, uses
Tannins
RL: NUU (Other use, unclassified); USES (Uses)
(method for preparing metal nanoparticles)

IT Alloys, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(method for preparing metal nanoparticles)

IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-31-5, Tin, uses
RL: CAT (Catalyst use); USES (Uses)
(method for preparing metal nanoparticles)

IT 7439-89-6P, Iron, preparation 7440-66-6P, Zinc, preparation
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)
(method for preparing metal nanoparticles)

IT 50-81-7, Ascorbic acid, uses 50-99-7, Glucose, uses 56-81-5, Glycerol,
uses 57-55-6, Propylene glycol, uses 67-64-1, Acetone, uses 68-12-2,
Dimethyl formamide, uses 107-21-1, Ethylene glycol, uses
111-46-6, Diethylene glycol, uses 112-27-6, Triethylene glycol
112-60-7, Tetraethylene glycol 302-01-2, Hydrazine, uses
1310-58-3, Potassium hydroxide, uses 1310-73-2, Sodium hydroxide, uses
5343-92-0, 1,2-Pentanediol 6920-22-5, 1,2-Hexanediol 7558-79-4
9002-89-5, Polyvinyl alcohol 9003-01-4, Polyacrylic acid 9003-06-9,
Acrylamide-acrylic acid copolymer 9003-39-8, Polyvinylpyrrolidone
9011-14-7, Poly(methyl methacrylate) 16940-66-2, Sodium borohydride
16949-15-8, Lithium borohydride 25265-71-8, Dipropylene glycol
25265-75-2, Butanediol 25322-68-3, Polyethylene glycol 25322-69-4,
Polypropylene glycol 25751-21-7, Acrylic acid-methacrylic acid copolymer
26099-09-2, Polymaleic acid 29132-58-9, Maleic acid-acrylic acid
copolymer 29656-58-4, Hydroxybenzoic acid 33725-74-5, Tetrabutyl
ammonium borohydride
RL: NUU (Other use, unclassified); USES (Uses)
(method for preparing metal nanoparticles)

IT 1317-39-1P, Copper oxide, preparation 7440-50-8P, Copper,
preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(method for preparing metal nanoparticles)

IT 142-71-2, Cupric acetate 3251-23-8, Cupric nitrate 7447-39-4, Cupric
chloride, reactions 7758-98-7, Cupric sulfate, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(method for preparing metal nanoparticles)

IT 1313-99-1P, Nickel oxide, preparation 1314-13-2P, Zinc oxide,
preparation 1332-37-2P, Iron oxide, preparation 7440-02-0P, Nickel,
preparation 7440-05-3P, Palladium, preparation 7440-06-4P, Platinum,
preparation 7440-22-4P, Silver, preparation 7440-32-6P, Titanium,
preparation 7440-57-5P, Gold, preparation 11113-77-2P, Palladium oxide
11129-89-8P, Platinum oxide 13463-67-7P, Titanium oxide, preparation
20667-12-3P, Silver oxide 39403-39-9P, Gold oxide
RL: SPN (Synthetic preparation); PREP (Preparation)
(method for preparing metal nanoparticles)

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L10 ANSWER 1 OF 6 CA COPYRIGHT 2009 ACS on STN
 AN 151:290790 CA
 ED Entered STN: 17 Sep 2009
 TI Polyimide-copper alloy laminates with good interlayer adhesion, their manufacture, and printed circuit boards
 IN Maruyama, Mutsuhiro; Kashiwagi, Toshinori; Son, En Hai
 PA Asahi Kasei E-Materials Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 18pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 76

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2009196249	A	20090903	JP 2008-41522	20080222
PRAI JP 2008-41522		20080222		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	IPCI	B32B0009-00 [I,A]; B32B0027-34 [I,A]; H05K0001-09 [I,A]; H05K0003-18 [I,A]
	FTERM	4E351/AA01; 4E351/AA07; 4E351/CC06; 4E351/DD04; 4E351/DD05; 4E351/DD12; 4E351/DD17; 4E351/DD18; 4E351/DD19; 4E351/GG01; 4E351/GG11; 4E351/GG13; 4E351/GG20; 4F100/AA17C; 4F100/AA18C; 4F100/AB01B; 4F100/AB01D; 4F100/AB13B; 4F100/AB14B; 4F100/AB15B; 4F100/AB16B; 4F100/AB17B; 4F100/AB18B; 4F100/AB21B; 4F100/AB31B; 4F100/AK01A; 4F100/AK46A; 4F100/AK49A; 4F100/BA03; 4F100/BA04; 4F100/BA07; 4F100/BA10A; 4F100/BA10B; 4F100/BA10D; 4F100/EH71B; 4F100/EH71D; 4F100/GB43; 4F100/JB16A; 4F100/JG04A; 4F100/YY00B; 5E343/AA01; 5E343/AA12; 5E343/AA22; 5E343/BB24; 5E343/BB34; 5E343/BB38; 5E343/BB44; 5E343/BB45; 5E343/DD22; 5E343/DD32; 5E343/GG02; 5E343/GG08; 5E343/GG20

AB Title laminates comprise elec. insulating resin layers, metal alloy layers on the resin layers, and metal oxides at interfaces between both layers. Thus, coating a polyimide film (Kapton) with 2,2'-bis[4-(4-aminophenoxy)phenyl]propane-3,3',4,4'-diphenyl sulfone tetracarboxylic dianhydride copolymer (I), heating, vapor-depositing Cu-Ni (1:1) on the I, oxidizing under N containing 200 ppm O at 350°, and electro-plating the alloy layer with Cu gave a laminate containing cuprous oxide and Ni oxide between the I and the alloy.

ST interlayer adhesion laminate polyimide copper nickel; printed circuit board copper laminate polyimide; cuprous oxide nickel oxide polyimide laminate; bisaminophenoxyphenylpropane diphenyl sulfone tetracarboxylate polyimide laminate

IT Oxides (inorganic)

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
 (at interfaces between resin layers and alloy layers; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT Polyethers

RL: NUU (Other use, unclassified); USES (Uses)
 (linear aliphatic, metal alloy precursor dispersion solvents; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT Polyoxalkylenes

RL: NUU (Other use, unclassified); USES (Uses)

- (metal alloy precursor dispersion solvents; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Polysulfones
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (polyamic acid-polyether-, elec. insulating layers; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Polyethers
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (polyamic acid-polysulfone-, elec. insulating layers; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Polysulfones
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyether-polyimide-, elec. insulating layers; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Polyamic acids
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (polyether-polysulfone-, elec. insulating layers; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Polyimides
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyether-polysulfone-, elec. insulating layers; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Laminated materials
 Printed circuit boards
 (polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Polyethers
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyimide-polysulfone-, elec. insulating layers; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Electric insulators
 (polyimides; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Oxidation
 (thermal; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Polyimides
 RL: TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic, elec. insulators; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT Copper alloy, base
 RL: TEM (Technical or engineered material use); USES (Uses)
 (thin layer; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT 1313-99-1P, Nickel oxide, uses 1332-29-2P, Tin oxide
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
 (at interface between polyimide and alloy; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT 1317-39-1P, Cuprous oxide, uses
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (at interface between polyimide and alloy; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)
- IT 7727-37-9, Nitrogen, uses

RL: NUU (Other use, unclassified); USES (Uses)
(atmosphere in oxidation of alloy; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 124758-70-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(elec. insulating layer; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 121150-79-6P, 2,2'-Bis[4-(4-aminophenoxy)phenyl]propane-3,3',4,4'-diphenyl sulfone tetracarboxylic dianhydride copolymer
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(elec. insulating layer; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 121150-82-1P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(elec. insulating layer; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 7440-50-8, Copper, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(electro-plating; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 111-46-6, Diethylene glycol, uses 9004-74-4, Polyethylene glycol methyl ether
RL: NUU (Other use, unclassified); USES (Uses)
(metal alloy precursor dispersion solvent; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidizing agent; polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 11101-27-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 302-01-2, Hydrazine, reactions 7758-98-7, Copper sulfate, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

IT 11101-29-4 11122-98-8 12621-71-5 12644-05-2
RL: TEM (Technical or engineered material use); USES (Uses)
(polyimide-Cu alloy laminates with good interlayer adhesion for printed circuit boards)

L10 ANSWER 2 OF 6 CA COPYRIGHT 2009 ACS on STN
 AN 150:568223 CA
 ED Entered STN: 18 Jun 2009
 TI Synthesis of I-III-VI₂ nanoparticles and fabrication of polycrystalline absorber layers for solar cells
 IN Jung, Duk-Young; Han, Jae Eok; Chang, Juyeon
 PA Sungkyunkwan University Foundation for Corporate Collaboration, S. Korea
 SO PCT Int. Appl., 52pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 49, 66, 73

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2009064056	A1	20090522	WO 2008-KR3421	20080617
	W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
PRAI	KR 2009049979	A	20090519	KR 2008-55227	20080612
	KR 2007-116189	A	20071114		
	KR 2008-55227	A	20080612		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	WO 2009064056	IPCI	B82B0003-00 [I,A]
		IPCR	B82B0003-00 [I,C]; B82B0003-00 [I,A]
	KR 2009049979	IPCI	B82B0003-00 [I,A]; C30B0030-06 [I,A]; C30B0030-00 [I,C*]; B01J0019-08 [I,A]
		IPCR	B82B0003-00 [I,C]; B82B0003-00 [I,A]; B01J0019-08 [I,C]; B01J0019-08 [I,A]; C30B0030-00 [I,C]; C30B0030-06 [I,A]

AB The present invention relates to a method for preparing I-III-VI₂ nanoparticles and a thin film of polycryst. light absorber layers efficiently for solar cells. The method for preparing I-III-VI₂ nanoparticles comprises the steps of : (a1) preparing a mixed solution by mixing

each element from groups I, III and VI in the periodic table with a solvent; (a2) sonicating the mixed solution; (a3) separating the solvent from the

sonicated mixed solution; and (a4) drying the product resulted from the above step (a3) to obtain nanoparticles. According to the present invention, it is possible to easily obtain a thin film of polycryst. light absorber layers having a desired composition by synthesizing I-III-VI₂ nanoparticle precursors having a uniform size through ultrasonic processing, fabricating a thin film and then treating it with heat. Addnl., since it is unnecessary to carry out a conventional deoxidization process, according to the present invention, it is possible to simplify the conventional fabrication process, thereby being expected to significantly reduce production cost.

ST Group IB IIIA chalcogenide; solar cell optical absorber nanoparticle Group IB IIIA chalcogenide

IT Group IIIA element chalcogenides
RL: IMF (Industrial manufacture); NANO (Nanomaterial); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(Group IB element compds., nanoparticles; synthesis of I-III-VI2 nanoparticles and fabrication of polycryst. optical absorber layers)

IT Group IB element chalcogenides
RL: IMF (Industrial manufacture); NANO (Nanomaterial); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(Group IIIA element compds., nanoparticles; synthesis of I-III-VI2 nanoparticles and fabrication of polycryst. optical absorber layers)

IT Controlled atmospheres
(inert; synthesis of I-III-VI2 nanoparticles and fabrication of polycryst. optical absorber layers)

IT Chelating agents
Dissolution
Drying
Heat treatment
Mixing
Nanoparticles
Optical filters
Polycrystalline materials
Solvents
Sonication
(synthesis of I-III-VI2 nanoparticles and fabrication of polycryst. optical absorber layers)

IT Alcohols
Amines
Ligands
Polyoxyalkylenes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(synthesis of I-III-VI2 nanoparticles and fabrication of polycryst. optical absorber layers)

IT Group IB elements
Group IIIA elements
Group VIA elements
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthesis of I-III-VI2 nanoparticles and fabrication of polycryst. optical absorber layers)

IT Thiols
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(synthesis of I-III-VI2 nanoparticles and fabrication of polycryst. optical absorber layers)

IT 613683-63-9P, Copper gallium indium sulfide (CuGa0.35In0.65S2)
RL: IMF (Industrial manufacture); NANO (Nanomaterial); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(nanoparticles; synthesis of I-III-VI2 nanoparticles and fabrication of polycryst. optical absorber layers)

IT 12018-94-9P, Copper indium sulfide (CuInS2) 12018-95-0P, Copper indium selenide (CuInSe2) 128715-76-4P, Copper gallium indium selenide (CuGa0.35In0.65Se2) 1155423-39-4P, Copper gallium indium selenide (Cu0.96Ga0.33In0.62Se2.09) 1155423-41-8P, Copper gallium indium selenide (Cu1.09Ga0.37In0.65Se1.89)
RL: IMF (Industrial manufacture); NANO (Nanomaterial); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(nanoparticles; synthesis of I-III-VI2 nanoparticles and fabrication of

IT polycryst. optical absorber layers)
12018-83-6, Copper gallium selenide (CuGaSe₂) 12158-59-7, Copper gallium sulfide (CuGaS₂) 107827-38-3, Copper indium selenide sulfide (CuIn(Se,S)₂) 110758-29-7, Copper gallium indium selenide sulfide (Cu(Ga,In)(Se,S)₂) 111419-77-3, Copper gallium indium selenide CuGa_{0.1}In_{0.1}Se₂ 111419-78-4, Copper gallium indium sulfide CuGa_{0.1}In_{0.1}S₂ 111419-79-5, Copper gallium selenide sulfide (CuGa(Se,S)₂)
RL: NANO (Nanomaterial); TEM (Technical or engineered material use); USES (Uses)
(nanoparticles; synthesis of I-III-VI₂ nanoparticles and fabrication of polycryst. optical absorber layers)
IT 50-70-4, Sorbitol, uses 56-81-5, Glycerin, uses 57-50-1, Sucrose, uses 57-55-6, Propyleneglycol, uses 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropanol, uses 71-23-8, 1-Propanol, uses 71-36-3, 1-Butanol, uses 71-41-0, Pentanol, uses 78-83-1, Isobutanol, uses 107-21-1, Ethylene glycol, uses 107-41-5, Hexylene glycol 107-88-0, Butylene glycol 111-46-6, Diethylene glycol, uses 112-24-3 112-27-6, Triethylene glycol 25265-71-8, Dipropylene glycol 25322-68-3, Polyethylene glycol 26248-42-0, Tridecanol 56539-66-3, 3-Methyl-3-methoxybutanol 174899-66-2
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(synthesis of I-III-VI₂ nanoparticles and fabrication of polycryst. optical absorber layers)
IT 57-13-6, Urea, uses 62-56-6, Thiourea, uses 100-97-0, Hexamethylenetetramine, uses 101-77-9 109-89-7, Diethylamine, uses 110-85-0, Diethylenediamine, uses 111-40-0, Diethylenetriamine 112-57-2, Tetraethylpentamine 121-44-8, Triethylamine, uses 124-09-4, Hexamethylenediamine, uses 302-01-2, Hydrazine, uses 25265-76-3, Phenylenediamine 25415-88-7, Hydrazide 26764-44-3
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); RGT (Reagent); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthesis of I-III-VI₂ nanoparticles and fabrication of polycryst. optical absorber layers)
IT 62-55-5, Thioacetamide 142-71-2, Copper diacetate 507-09-5, Thioacetic acid, uses 593-79-3, Dimethyl selenide 598-54-9, Cuprous acetate 1305-84-6, Calcium selenide (CaSe) 1312-43-2, Indium sesquioxide 1312-74-9, Potassium selenide (K₂Se) 1313-82-2, Sodium sulfide, uses 1313-85-5, Sodium selenide (Na₂Se) 1317-38-0, Cupric oxide, uses 1317-39-1, Copper oxide (Cu₂O), uses 1317-41-5, Copper selenide (CuSe) 2571-06-4, Gallium acetate 3251-23-8, Cupric nitrate 7440-50-8, Copper, uses 7440-50-8D, Copper, compds. 7440-55-3, Gallium, uses 7440-55-3D, Gallium, compds. 7440-74-6, Indium, uses 7440-74-6D, Indium, compds. 7681-65-4, Copper monoiodide 7704-34-9, Sulfur, uses 7704-34-9D, Sulfur, compds. 7758-89-6, Cuprous chloride 7758-98-7, Cupric sulfate, uses 7782-49-2, Selenium, uses 7782-49-2D, Selenium, compds. 7783-07-5, Hydrogen selenide (H₂Se) 7783-51-9, Gallium trifluoride 7787-70-4, Copper monobromide 7789-19-7, Copper difluoride 10025-82-8, Indium chloride 12023-99-3, Gallium trihydroxide 12024-21-4, Gallium sesquioxide 12024-24-7, Gallium selenide (Ga₂Se₃) 12056-07-4, Indium selenide (In₂Se₃) 13450-88-9, Gallium tribromide 13450-90-3, Gallium trichloride 13450-91-4, Gallium triiodide 13464-82-9, Indium sulfate (In₂(SO₄)₃) 13465-09-3, Indium tribromide 13465-10-6, Indium monochloride 13465-11-7, Indium dichloride 13494-90-1, Gallium trinitrate 13510-35-5, Indium triiodide 13529-74-3, Indium triperchlorate 13770-18-8, Cupric perchlorate 13770-61-1, Indium trinitrate 13966-94-4, Indium monoiodide 14226-34-7, Indium dibromide 14280-53-6, Indium monobromide 15605-68-2, Gallium monoiodide 17108-85-9, Gallium monochloride 19854-31-0, Gallium perchlorate 20405-64-5, Copper selenide (Cu₂Se)

20427-59-2, Cupric hydroxide 20661-21-6, Indium trihydroxide
22655-59-0, Gallium monobromide 25114-58-3, Indium triacetate
34781-33-4, Gallium sulfate 110740-65-3, Gallium indium selenide
(GaInSe₃) 128715-78-6, Copper selenide (Cu₀₋₂Se)
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or
reagent); USES (Uses)
(synthesis of I-III-VI₂ nanoparticles and fabrication of polycryst.
optical absorber layers)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE CITED REFERENCES

- (1) Eberspacher, C; Thin Solid Films 2001, V387, P18 CA
- (2) Fuji Photo Film Holdings Inc; JP 2003001096 A 2003 CAPLUS
- (3) Korea Institute Of Energy Research; KR 100588604 B1 2006

=> => s "copper oxide"/cn
L11 3 "COPPER OXIDE"/CN

=> => d his

(FILE 'HOME' ENTERED AT 16:24:49 ON 13 DEC 2009)

FILE 'REGISTRY' ENTERED AT 16:25:22 ON 13 DEC 2009

L1 1 S HYDRAZINE/CN
L2 1 S "DIETHYLENE GLYCOL"/CN
L3 3 S "COPPER OXIDE"/CN
L4 0 S L1 AND L2 AND L3

FILE 'CA' ENTERED AT 16:26:49 ON 13 DEC 2009

L5 7 S L1 AND L2 AND L3

=> d all 7

L5 ANSWER 7 OF 7 CA COPYRIGHT 2009 ACS on STN

AN 112:221766 CA

OREF 112:37355a,37358a

ED Entered STN: 09 Jun 1990

TI Manufacture of monodispersed spherical powder from copper

IN Yoshitake, Masayoshi; Sugito, Toyohiko; Kito, Shigeru

PA Fukuda Metal Foil and Powder Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B22F009-20

ICS H01B001-02; H01B001-22

CC 56-4 (Nonferrous Metals and Alloys)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01290706	A	19891122	JP 1988-120361	19880517
	JP 07084605	B	19950913		
PRAI	JP 1988-120361		19880517		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 01290706	ICM	B22F009-20
		ICS	H01B001-02; H01B001-22
		IPCI	B22F0009-20 [ICM, 4]; B22F0009-16 [ICM, 4, C*]; H01B0001-02 [ICS, 4]; H01B0001-22 [ICS, 4]
		IPCR	B22F0009-16 [I, C*]; B22F0009-20 [I, A]; H01B0001-02 [I, C*]; H01B0001-02 [I, A]; H01B0001-22 [I, C*]; H01B0001-22 [I, A]; H05K0001-09 [N, C*]; H05K0001-09 [N, A]
		ECLA	T05K

AB Powdered Cu oxide is precoated with a polyhydric alc. and then reduced with hydrazine to manufacture the fine Cu powder especially suitable for elec. conductive

coating for elec. circuits. Thus, CuO powder was mixed with ethylene glycol, and reduced with hydrazine to manufacture the spherical Cu powder having a monodisperse size distribution.

ST copper powder elec cond coating; polyhydric alc coating copper oxide; hydrazine redn copper oxide powder

IT Films

(elec. conductive, copper powder for, manufacture of spherical)

IT Electric conductors

(film, copper powder for, manufacture of spherical)

IT Alcohols, uses and miscellaneous

RL: USES (Uses)

(polyhydric, copper oxide powder coated with, for reduction to monodisperse copper powder)

IT 56-81-5, Glycerin, uses and miscellaneous 107-21-1, Ethylene glycol, uses and miscellaneous 111-46-6, Diethylene glycol, uses and miscellaneous 112-27-6, Triethylene glycol 25322-68-3, Polyethylene glycol

RL: USES (Uses)

(coating, copper oxide powder with, for reduction to prepare monodispersed copper powder)

IT 7440-50-8P, Copper, preparation

RL: PEP (Physical, engineering or chemical process); PREP (Preparation);

PROC (Process)

(powder, manufacture of monodispersed spherical, by reduction of oxide)

IT 1317-38-0, Copper oxide (CuO), reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reduction of powdered, polyhydric alc. coating in, for monodispersed copper powder)

IT 302-01-2, Hydrazine, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reduction with., of copper oxide powder coated with polyhydric alc., monodispersed copper powder by)